

# Invitation to a Workshop on Comfort Controls in California Homes

You are invited to attend a Workshop on Comfort Controls in California Homes  
To be held in Berkeley, California on October 15<sup>th</sup> 2007.

The workshop's goal is to identify key areas for further research, current operational issues, and needs for harmonized specifications and standards. For example, the workshop might immediately establish a Comfort Control Coordinating Group to resolve impending conflicts in control logic, communication protocols, and user experience that may result from new California standards and potential Energy Star specifications.

Key participants in the workshop will include thermostat and HVAC manufacturers, the Demand Response (DR)-thermostat group, EPA Energy Star, manufacturers of consumer electronics and related communications products, and State regulators. Sociologists, anthropologists, and experts in user experience will also participate.

## Background

The home thermostat's role is destined to become increasingly more significant as upcoming code changes in California's Title 24 and Demand Response regulations are implemented. Thermostats will need to receive price and emergency signals from utilities and adjust conditions in response to these signals. Thermostats will manage the mechanical ventilation systems in many new homes, and future thermostats may also control lighting, pool pumps, and other energy-intensive activities through a variety of communications networks.

Further complicating the mix is the increasing number of strategies that have been either envisioned or encouraged for future California homes. These strategies include:

- the *DR-responsive home*, where reducing peak power demand is the primary goal of the thermostat;
- the *floating home*, where careful design of thermal mass and solar design ensure acceptable comfort with mostly passive controls;
- the *smart home*, where a dense network of sensors and automatic controls ensure that the home meets occupants' comfort needs with minimum occupant input; and
- the *ultra-healthy home*, where narrow environmental conditions are maintained to address medical requirements (such as allergies).

In spite of these anticipated new responsibilities, today's programmable thermostat has been notably unsuccessful at achieving its original goal of reliably saving significant heating and cooling energy. Energy Star recently downgraded its programmable thermostat program after finding insufficient energy savings in homes equipped with programmable thermostats.

This workshop is being held as part of a LBNL project for the California Energy Commission's Demand Response Research Center (DRRC, [www.drirc.lbl.gov](http://www.drirc.lbl.gov)). The project goal is to improve our understanding of the factors influencing the effectiveness of the thermostat and its use. In the long run, we will propose technical, behavioral, and organizational improvements. The results will help manufacturers build better equipment, and Californians enjoy greater thermal comfort in healthier homes while saving money through reduced energy and demand for peak power.

### **Logistics**

The workshop will take place in Perseverance Hall at Lawrence Berkeley National Laboratory, Berkeley, California on October 15th, from 9:00 a.m. to 5:00 p.m. Lunch and coffee will be provided. Shortly after the workshop, participants will receive a summary document giving an overview of the workshop.

Please RSVP to Iain Walker ([iswalker@lbl.gov](mailto:iswalker@lbl.gov), 510-486-4692).

Further information will be posted at <http://comfortcontrols.lbl.gov>

# **DRAFT Agenda**

## **Workshop on Comfort Controls in California Homes**

**Monday October 15<sup>th</sup>, 2007**

**Perseverance Hall, Lawrence Berkeley National Laboratory Berkeley,  
CA**

**1. Introductions**

**2. Overview of the state-of-the-art (Research Review by Iain Walker and Alan Meier)**

- Summary of literature
- What do we know well
- What do we not know

**3. Identify key issues for the future**

- Short term - next 5 years
- Long term - more than 10 years from now
- Participant initiated ideas
- Link to current California activities

**4. Identify next steps for California**

- California building and appliance standards
- Occupant interactions
- Ensuring good installation